

# PATENT COOPERATION TREATY

From the:  
INTERNATIONAL SEARCHING AUTHORITY

To:

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## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year)

21 OCT 2004

Applicant's or agent's file reference  
S80722636

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.  
**PCT/AU2004/000987**

International filing date (day/month/year)  
**23 July 2004**

Priority date (day/month/year)  
**23 July 2003**

International Patent Classification (IPC) or both national classification and IPC  
**Int. Cl. <sup>7</sup> G11B 7/00**

Applicant

**BANDWIDTH FOUNDRY PTY LTD et al**

1. This opinion contains indications relating to the following items:

- |                                     |              |  |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the opinion   |
| <input type="checkbox"/>            | Box No. II   | Priority   |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability   |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention   |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited  |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application   |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application  |

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the IPEA/AU

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

**PCT/AU2004/000987**

**Box No. I      Basis of the opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

**PCT/AU2004/000987**

**Box No. V**      **Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims 1-12,14-16,19-33	YES
	Claims 13,17,18	NO
Inventive step (IS)	Claims 1-12,14-16,19-22,24-25,27-33	YES
	Claims 13,17,18,23,26	NO
Industrial applicability (IA)	Claims 1-33	YES
	Claims	NO

**2. Citations and explanations:**

- D1 US 6654521 B2 (SHENG et al.) 25 November 2003
- D2 US 6549664 (DAIBER et al.) 15 April 2003
- D3 BURYAK et al. "Optimization of Refractive Index Sampling for Multichannel Fiber Bragg Gratings" IEEE Journal of Quantum Electronics, Vol. 39 , No. 1 January 2003
- D4 WO 2002/075408 A1 (REDFERN OPTICAL COMPONENTS PTY. LTD) 26 September 2002
- D5 US 2002/0015376 A1 (LIU et al.) 7 February, 2002
- D6 WO 1999/039338 A1 (SIROS TECHNOLOGIES, INC.) 5 August 1999
- D7 US 5659536 A (MAILLOT et al.) 19 August 1997

**Novelty (N)**

Claim 1 defines a holographic storage method where the partial grating sampling function having a phase and amplitude combined with an m-level coding scheme. The sampling function amplitudes have m possible values.

The closest prior art to claim 1 was either D3 or D4. These citations disclose the sampling function but are not suggesting how to apply this function to holographic storage. Claim 1 is novel.

Claims 13,17, 18 lack novelty in light of D6. D6 clearly discloses holographic storage with a plurality of grating structures, and at least one data reading face. The series of m-level coded elements is implicit in D6 so that these claims lack novelty taking D6 alone. D7 also deprives these claims of novelty.

**Inventive step (IS)**

D2,D6 and D7 are representative of optical data carriers with a plurality of gratings known at the priority date of the present claims. When any two of these documents are combined (the combination being obvious) the listed claims lack an inventive step.

**Industrial applicability (IA)**

The methods and optical carrier have applications in data storage technology.